Application No. 10/085,142
Response to Office Action Dated April 7, 2006
Amendment dated September 7, 2006

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of claims:

Please cancel claims 1-41, without prejudice or disclaimer.

1-41.   (Cancelled)

42.   (New) A method for performing genotypic classification of fluorescence data generated

by polymorphic analysis of a DNA sample, comprising:

(a)   receiving a data set generated by a fluorometric genotyping device, the data set

comprising fluorescence dye emissions for one or more pairs of probes, the probes of the probe

pairs comprising different dyes and being specific for different alleles, wherein the relative

intensity of fluorescence dye emissions is reflective of the allelic composition of the DNA

sample;

(b)   plotting the fluorescence dye emissions of the data set on a graph with a first axis

representing a first dye emission associated with a first allele and a second axis representing a

second dye emission associated with a second allele;

(c)   generating angular values for each of the probe pairs of the data set based on the

relative intensity of fluorescence dye emissions with respect to one another as plotted on the

graph;

(d)   sorting the set of angle values generated in step (c) to produce an ordered set of

angular values;

(d) generating a set of angular difference values by subtracting one angular value from a next angular value of the ordered set of angular values, for each adjacent pair of the ordered set of angular values;

(e) identifying at least one category-dividing angular value by identifying at least one of the ordered set of angular values for which the angular difference value from the previous angular difference value differs by at least a predetermined threshold;

(f) classifying the genotype of the DNA sample based on the plotted fluorescence dye emissions of each probe pair and their locality with respect to the at least one category-dividing angular value; and

(g) outputting the classified genotype of the DNA sample.

43. (New) The method of claim 42, wherein the at least one category-dividing angular value divides the data set into at least two categories selected from homozygous for the first allele, homozygous for the second allele, heterozygous, and an absence of the first allele and second allele.

44. (New) The method of claim 43, wherein the at least one category-dividing angular value divides the data set into the categories of homozygous for the first allele, homozygous for the second allele, heterozygous, and an absence of the first allele and second allele, each category being represented by a quadrant of the graph.

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45. (New) The method of claim 42, wherein the generating angular values of step (c) comprises computing an arctangent of the first and second dye emissions.

46. (New) The method of claim 42, further comprising (h) identifying at least one pair of probes as undetermined based on at least one predetermined condition.

47. (New) The method of claim 46, wherein the at least one predetermined condition is based on comparison of the dye emissions to a control probe.

48. (New) The method of claim 46, wherein the at least one predetermined condition is based on a range between a maximum and minimum fluorescence dye emission.

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